

**Practice: 430 - Irrigation Pipeline****Scenario: #1 - Micro Irrigation Pipeline****Scenario Description:**

Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve a micro irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 1,500

**Scenario Cost:** \$4,046.79

**Scenario Cost/Unit:** \$2.70

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, 12" x 48"	53	Trenching, earth, 12" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$1.22	1500	\$1,830.00
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	16	\$358.88
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	1109	\$1,596.96
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #2 - Pipe System ≤8 in Diameter, >50 ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 1,500

**Scenario Cost:** \$17,239.47

**Scenario Cost/Unit:** \$11.49

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	1500	\$4,155.00
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	16	\$358.88
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	8656	\$12,464.64
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #3 - Pipe System ≤ 8 in Diameter, ≤ 50 ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 50

**Scenario Cost:** \$995.05

**Scenario Cost/Unit:** \$19.90

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	50	\$138.50
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	8	\$179.44
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	289	\$416.16
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #4 - Pipe System 10-12 in Diameter, >50 ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as %10 of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 1,500

**Scenario Cost:** \$22,534.79

**Scenario Cost/Unit:** \$15.02

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	1500	\$4,155.00
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	20	\$448.60
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	12271	\$17,670.24
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #5 - Pipe System 10-12 in Diameter, ≤ 50ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 50

**Scenario Cost:** \$1,212.71

**Scenario Cost/Unit:** \$24.25

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	50	\$138.50
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	10	\$224.30
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	409	\$588.96
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #6 - Pipe System ≥15 in, >50 ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 1,500

**Scenario Cost:** \$34,029.07

**Scenario Cost/Unit:** \$22.69

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	1500	\$4,155.00
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	48	\$1,076.64
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	19817	\$28,536.48
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95

**Practice: 430 - Irrigation Pipeline****Scenario: #7 - Pipe System  $\geq 15$  in,  $\leq 50$ ft Installation****Scenario Description:**

Description: Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements.

Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use.

Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.

**Before Situation:**

Pipeline needed to replace or supplement inefficient irrigation conveyance systems.

**After Situation:**

Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.

**Scenario Feature Measure:** Ft of pipe

**Scenario Unit:** Foot

**Scenario Typical Size:** 50

**Scenario Cost:** \$1,889.61

**Scenario Cost/Unit:** \$37.79

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Trenching, Earth, loam, 24" x 48"	54	Trenching, earth, loam, 24" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$2.77	50	\$138.50
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$22.43	24	\$538.32
<b>Materials</b>						
Pipe, PVC, dia. < 18", weight priced	1323	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	\$1.44	661	\$951.84
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$260.95	1	\$260.95